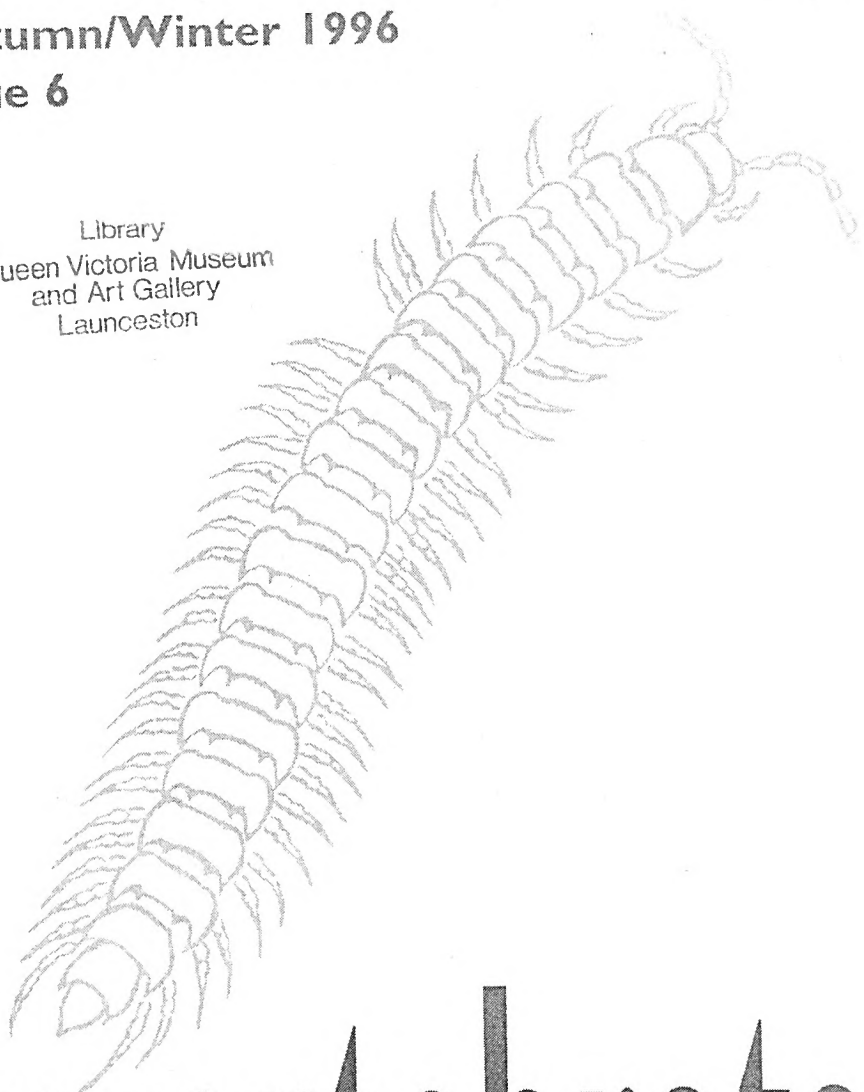


25/6/1996

Autumn/Winter 1996
Issue 6

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Invertebrata

Tasmania's Invertebrate Newsletter

Welcome to the second half of 1996. It is frightening how quickly time goes these days. If anyone has checked the *Queen Victoria Museum & Art Gallery* home page lately they will find 'Invertebrata-on-line' issue 5 and soon issue 6. Our computer officer, Mark Gordon, was very keen to get the publication on 'the net' because people were visiting our home page and there was little content, hence the premature arrival of our invertebrate newsletter. If you wish to continue receiving a hard copy of *Invertebrata* please fill in the appropriate parts of the form I have included. I'd like to thank all those diehard contributors and also quite a few new ones this issue. I hope everyone finds their articles inspiring, I certainly did.

The new and improved desktop publishing skills are thanks to our graphic artists, Carolyn Coert and Jane Whittingham. Our increased readership has required a more polished publication.

This issue I have two requests; firstly that everyone please return the enclosed forms updating current postal addresses, interests (an updated register of invertebrate zoologists will be produced for the December issue) and e-mail addresses. Secondly, I would like to ask for donations to help cover the production and postage costs (I would recommend \$5). If you have any queries, please contact me.

Written contributions to this newsletter can be submitted as hard copies (< 150 words) or on disk in Macintosh or IBM format as text files. **The deadline for contributions to the next newsletter is 29 November 1996.** The opinions expressed in this newsletter are not necessarily those of the editor or the *Queen Victoria Museum & Art Gallery*.

Editor

Louise McGowan

Queen Victoria Museum & Art Gallery

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Around the traps.....

Tasmanian Museum and Art Gallery (TMAG)

A new marine invertebrate group for Tasmania

A new marine organisation was formed in Tasmania towards the end of 1995. It has been named the Tasmanian Marine Naturalists Association and consists of about 38 members, some of whom are professional zoologists. Despite the obvious interest in 'cuddly' dolphins, whales and seals, many members are devoted invertebrate enthusiasts, showing more interest in sea anemones and nudibranchs than things with fins!

To promote interest in the association, a public short course on Marine Taxonomy and Identification was held at the TMAG and the Woodbridge Marine Discovery Centre over the weekend of the 24 - 26 May 1996. About 20 people attended. Friday night and all Saturday were committed to the ecology, taxonomy and identification of marine life at the TMAG. On Friday night Jon Bryan talked extensively on food webs and ecology flows, and showed slides of fish, seals and cetaceans.

Saturday was a full day of taxonomic talks, mainly on invertebrates. Speakers were Jane Elek, Liz Turner, Jon Bryan and Christine Materia.

Sunday's weather was beautiful and about 16 people turned up at the Woodbridge Marine Discovery Centre for a day of practical work. We boarded the '*Penghana*' and conducted salinity and temperature trials. During the day, two short dredges turned up some interesting specimens - all invertebrates, including a baby octopus (we all agreed never to eat charred baby octopus again). On the way back we towed a plankton net and at the centre we spent a fascinating time looking at copepods, diatoms, lucifers and other weird and wonderful creatures.

Liz Turner then talked about the integration of different coastal ecological habitats and their associated animals. Some time was spent observing the Marine Discovery Centre's invertebrates in the touch tank, and the vertebrates in the open tank. By the end of the day we all agreed that it had been a very successful weekend, although hard work, and that another event should be organised before the end of the year.

Queen Victoria Museum and Art Gallery (QVMAG)

It is an exceptionally busy time at the QVMAG at present with the impending move to the Inveresk Railyards. For those who don't know many departments in the museum and its staff will be relocating to the railyards over the next few years. The Wellington Street site will be developed as a Natural History Museum incorporating Zoology, Botany, Geology and Physical Sciences including Astronomy. This means that most staff have many extra tasks to complete and are working extremely hard.

The zoology department has, and is yet again, about to undergo staff changes. John Terry joined us in February as a Technical Officer (part time). Louise McGowan will be on maternity leave (this is the last time!) as from July 31 1996 and a replacement will be appointed to her part time position shortly. Louise will still edit *Invertebrata* but will really just be editor rather than typist, desktop publisher, photocopier and letter folder! Bronte Nixon and Rob Blakemore have been temporarily employed under RFA funding but more about that later. Tim Kingston as curator is the mainstay.

The museum has embarked on a series of Family Activity Days which are organised by our Public Programs Manager, Kaye Dowling. To kick off the series and celebrate International Museums Day on Saturday 18 May 1996, *Spiders Alive* was held at the museum from 10 am - 4 pm. A few phone calls to some spider mates attracted a range of interests; Liz Turner from the Tasmanian Museum and Art Gallery talked to people about the general ecology and biology of spiders, Geoff Cossum from The George Evans Museum in Broadmeadows, Victoria, demonstrated rearing techniques and photography, Niall Doran from the University of Tasmania presented his enigmatic cave spiders, Louise McGowan from the QVMAG provided information on some common spiders in Tasmania and displayed a range of live and preserved specimens, Mike Tobias demonstrated his illustrative skills, and artist Jill Eastly had the kids (and many adults) making some spectacular spider webs from wool and sticks. It was a hugely successful day with 500 visitors and Niall Doran gives his perspective in the articles section. The next family activity day is *Skeletons: The Inside Story*, on Saturday 6 July 1996 from 10 am - 4 pm at the QVMAG.

Louise McGowan
Research Officer
QVMAG

Forestry Tasmania

Tasmanian Forest Insect Collection

This collection was commenced in 1974 as a specialist collection primarily for the identification of insect pests of commercial plantings and wood products. Since then the scope of the collection and its function have altered to include conservation, biodiversity and quarantine projects.

The collection is housed in 19 ten-drawer cabinets containing pinned material and contains some 13 000 specimens of 3 300 species. A spirit collection of immature stages contains some 3 000 vials in 40 card drawers.

Research and project work have been the strengths of the collection, these include, (A) wood-boring insects and their predators and parasites (B) herbivores, especially leaf beetles (Chrysomelidae) and (C) ground beetles (Lucanidae and Carabidae).

The collection is linked with the TMAG who hold database records for reference. Development and entry of data to the database is ongoing with the majority of pinned material recorded. As yet the bulk of the spirit collection has not been entered; however, some groups (spiders, centipedes and millipedes) are complete.

The collection is a member of the Council of Heads of Australian Entomological Collections and is represented at Tasmanian Curators meetings. A small booklet listing Tasmanian forest insects and their host plants held in the collection was published in 1990 (due to be updated) and is available at Forestry Tasmania. Any enquiries regarding the collection can be directed to:

Dick Bashford
Curator
GPO Box 207B
Hobart Tasmania 7001
Australia
Email db3@forestry.tas.gov.au

Environment & Heritage Project Team

Invertebrate Research in the CRA

A Comprehensive Regional Assessment (CRA) of Tasmania's forests is currently being undertaken. This is under a one-off intergovernmental Regional Forest Agreement (RFA), which is trying to combine the conservation of wildlife and heritage with planning for long term ecologically sustainable use of forests. The work involves many multi-faceted studies on forest biota and the massive compilation of species and community assemblage data. Invertebrates have received good representation in the biodiversity component of assessments and a number of important taxonomic and research projects have been funded during 1996. A list of the invertebrate projects underway and their project officers are:

- * Assessment of the decaying log resource in the management of cryptozoic invertebrates particularly lucanid beetles (Rob Taylor, Jeff Meggs). The aim of this work is to assess the impacts of different land use practices, particularly logging and burning of the decaying log resource which has important implications for the habitat requirements of specific Tasmanian invertebrate groups.
- * Investigation of the Mt Arthur burrowing crayfish *Engaeus orramakunna* (Rob Taylor, Niall Doran). This project will document the distribution, habitat requirements, management needs and reservation status of the Mt Arthur burrowing crayfish. This information will enable management recommendations for Tasmania's burrowing crayfish in forests to be prepared.
- * Management prescriptions for Tasmania's cave fauna (Alistair Richardson, Arthur Clark) will produce guidelines specifically for cave fauna but which are compatible with geoconservation recommendations for catchment, karst and other forest management. This work will lead to increased knowledge of the habitat requirements of cave fauna and benefit forest management.
- * Invertebrate bioregions in Tasmania (Bob Mesibov) will produce provisional maps and investigate large-scale correlations between invertebrate faunal boundaries and environmental domains. Faunal bioregions, faunal breaks and 'hot spots' will be identified as well as important upgrading of invertebrate data bases. A special component of this work is the inclusion of terrestrial

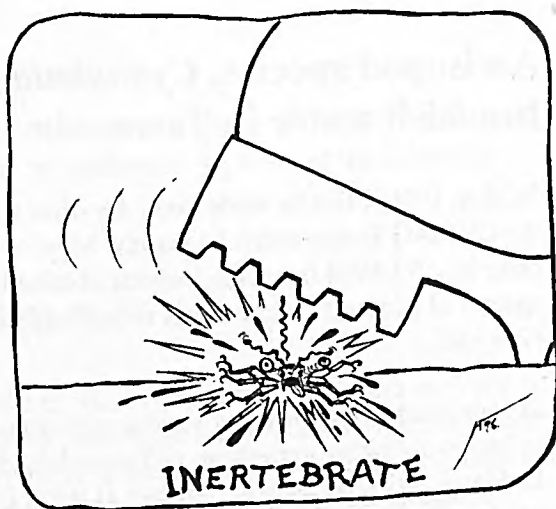
earthworms, their taxonomy and distribution (Rob Blakemore and Tim Kingston) and also the systematic sorting and classification of freshwater invertebrates collected by the Inland Fisheries Commission (Alastair Hunt).

* Sampling Aquatic habitats for Tasmania's stream macroinvertebrates (Peter Davies) is designed to sample and process Tasmanian stream sites for macroinvertebrates in autumn 1996, using the National River Health Monitoring Program rapid assessment protocol. The results of this work will be combined with other data sets so that classification/clustering and modelling can be undertaken.

* Reservation assessment and habitat requirements of the giant Tasmanian freshwater crayfish *Astacopsis gouldi* (Inland Fisheries Commission/Pierre Horwitz) is collating existing information, conducting a survey to determine habitat requirements, undertaking reservation analysis, identifying impacts and will produce a National Recovery Plan for the species.

The results of these projects plus other faunal and floral assessments should begin to appear from September to December this year for consideration in the Regional Forest Agreement and reservation assessment.

Sally Bryant
CRA Project Team
Environment and Heritage
Project Team (RFA)
GPO Box 207 B
Hobart Tasmania 7001
Australia



Cartoon by Mike Tobias

Recent Publications

Insects and Allies of Tasmania - New and revised species

This bulletin has recently been compiled by Trevor Semmens. It is a listing of new and revised names of Tasmanian insects and their allies described in recent publications (i.e. late 1995 and early 1996). The relevant publications are also noted. It is hoped to bring out further bulletins on an irregular basis. Trevor would be happy to receive any information on papers dealing with the Tasmanian insect fauna, especially new descriptions.

Trevor Semmens
Department of Primary Industry and Fisheries
GPO Box 192 B
Hobart Tasmania 7001
Australia

Current Research

An isopod species, *Cymodetta gambosa*, found in brackish water in Tasmania

In May, 1996, I finally made good my offer to examine Isopoda collected during the QVMAG Tamar intertidal survey. Most of the field work for this survey was done in 1993-1994 but some isopods obtained late in 1992 were included. A species of particular interest was not identified in time to be listed by Smith (1995:86).

Six specimens of *Cymodetta gambosa* Bowman and Kühne, 1974, were collected on the western shore of Tamar Island, in the Tamar River, Tasmania on 12 March 1994, by Dr B.J. Smith et al (Grid reference: EQ 065 186). *C. gambosa* belongs to the suborder Flabellifera, Family Sphaeromatidae. Most

flabelliferans are marine but *C. gambosa* lives in fresh or brackish water. The Tamar River is tidal for its whole length but its upper reaches are brackish due to fresh water received from the North Esk and South Esk Rivers which meet at its head. Tamar Island is only a few kilometres downstream from these tributaries.

In September, 1989, one male and two females of *C.gambosa* were found in the Derwent River, Tasmania, at Murphy's Flat (between New Norfolk and Granton), by J.Chapman and Dr P.H.J. Horwitz (Grid reference EN 5125 2660). These specimens are now in the Tasmanian Museum and Art Gallery. At Murphy's Flat the Derwent River is tidal but brackish, with the limit of tidal movement not far upstream.

Bowman and Kuhne (1974:239) recorded *C.gambosa* from New South Wales, Queensland and Victoria. The sample from the Derwent River was listed in the Tasmanian Museum and Art Gallery Annual Report 1989-1990 (Hobart, 1991:43). I have seen no other published record of *C.gambosa* from Tasmania. Thank you to Dr T.J. Kingston, QVMAG for his help with information for this report.

Alison Green
Former Curator of Zoology
TMAG
(Can be contact through QVMAG)

References:

- Bowman, J.E. and Kühne, P. (1974)
Records of the Australian Museum 29 (9) : 235 - 244.
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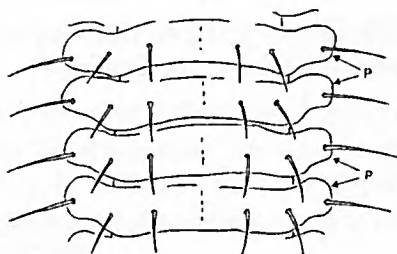
Chordeumatidan Millipedes

These small, curious millipedes live in loose forest litter (not in the soil) and in bark crevices on standing trees. They have large multi-faceted eyes, 30-32 body segments (in local species) and a pair of spinnerets at the tail end. Silk from the spinnerets is used to weave egg nests and to line the chambers in which the animals moult. Perhaps the most distinctive feature of chordeumatidans is a set

of six long setae on the dorsal surface of each body segment (see illustration). Eleven species in the Order Chordeumatida, in five genera and two families, have now been described from Tasmania (see references below). The most common is *Australeuma jeekeli* Golovatch 1986, which is circa 10 mm long and dark-brown to black above with pale paranota. *A. jeekeli* is widespread in eastern Tasmania and can be very abundant in wet sclerophyll forest. In a pitfall survey carried out recently by Forestry Tasmania in the Picton River area, 62% of all trapped millipede specimens were *A. jeekeli*. A yellow-coloured *Australeuma* species is sometimes extremely abundant in northwest Tasmanian rainforest; it emerges from hiding at night and can be collected in bulk from the surface of the moss-mat on tree trunks. Another chordeumatidan, *Reginaterreuma tarkinensis* Shear & Mesibov 1995, is widespread in the west and can often be found sheltering by day under loose bits of bark and wood lying on the forest floor. This species is dark brown, up to 17 mm long, fast-walking (for a millipede!) and 'hairy-looking' thanks to its numerous dorsal setae.

The chordeumatidans are the best known of the Tasmanian millipedes, taxonomically speaking, but new locality records will always be welcome. Contact me or QVMAG Zoology staff for recommended storage, shipment and labelling procedures.

Bob Mesibov
Research Associate
QVMAG.



Portion of the midbody dorsal surface of *Australeuma simile* Golovatch 1986, showing paranota (p) and long dorsal setae. Anterior is towards the top. A number of Tasmanian chordeumatidans lack paranota and are more or less cylindrical, but the six segmental setae are always present in these species.

References

Golovatch, S.I. 1986. The first Chordeumatida (Diplopoda) from Tasmania, with the description of a new genus and three new species. *Zoologischer Jahrbücher, Abteilung für Systematik* **113**:251-264.

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Wellington St
Launceston Tasmania 7250
Australia

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Telephone No. ()

Fax No. ()

Shear, W.A. and Mesibov, R. 1994. Australian chordeumatidan millipeds. I. New observations on the genus *Peterjohnsia* Mauries, with the description of a new species from Tasmania (Diplopoda, Chordeumatida, Peterjohnsiidae). *Invertebrate Taxonomy* 8:535-544.

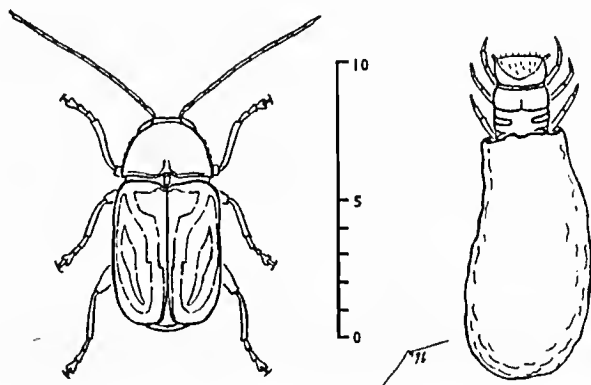
Shear, W.A. and Mesibov, R. 1995. Australian chordeumatidan millipeds. II. A new species of *Reginaterreuma* Mauries from Tasmania (Diplopoda, Chordeumatida, Metopidiotrichidae). *Myriapodologica* 3:71-77.

Shear, W.A. and Mesibov, R. (in press) Australian chordeumatidan millipeds. III. A review of the millipede family Metopidiotrichidae Atterms in Australia (Diplopoda:Chordeumatida). *Invertebrate Taxonomy*.

The Leaf Beetle, *Cadmus australis* (Family Chrysomelidae)

Chrysomelidae, containing more than 25,000 species, is the largest of three families forming the Superfamily Chrysomeloidea and totalling about 4,000 species. Distribution is cosmopolitan.

Chrysomelid beetles are primarily leaf eaters and are of economic concern as they attack a wide range of cultivated plants and trees. In Australia, numerous species are well known as pests of eucalypts. *Cadmus australis* is one of these and is common in forest areas, feeding on leaves of a variety of juvenile and advanced eucalyptus species.



Adults are small, mainly black with elongate bright yellow markings on the elytra. The male is approximately 6.6 mm long and the female 7.0 mm long. Mating pairs have been collected in March and are common in A.P.P.M. North Forests Products reforestation areas at Nunamara.

After mating the male dies and the female feeds continuously until and during the egg laying period. Eggs are laid singly. On emergence they are encapsulated in a bullet shaped case with a sealed aperture, the female using the rear legs and abdominal plates to turn the egg and cover it with a special sticky faecal material. When covered the sealed cases are dropped into the forest litter where, upon hatching, the larvae feed on leaves, grasses etc. Once hatched, the larva uses the utilitarian case as a portable home, enlarging as necessary and eventually sealing off the aperture for its final use as a pupal case.

Mike Tobias

Naturalist

Nunamara Tasmania 7259

Australia

Two crab species from the Tamar River, Tasmania

The two species of *Brachyura* examined for this report are:-

PORTUNIDAE; *Carcinus maenas* (Linnaeus, 1758) European shore crab

PILUMNIDAE; Probably *Pilumnus* sp.; hairy crab

On 11 February, 1996, the Launceston Field Naturalists Club organised an excursion to the George Town Wildlife Sanctuary, on the eastern shore of the Tamar River. The main purpose was to observe wading birds but some people looked for invertebrates as well. Paul Cunningham and Sarah Tassell found and caught a large male of *Carcinus maenas*. It was under a stone, in a rock pool, at about mid-tide level (Green, 1996). The specimen is now in the QVMAG's collection. After this discovery of an introduced European shore crab, I checked the identity of the other crabs sighted that morning but they all belonged to native species.

C. maenas was first reported from Australia in 1900, from Port Phillip Bay, Victoria. Specimens from New South Wales, South Australia and Western

Australia have been recorded since then. The species was first recognised in Tasmania in 1993, at Humbug Point, St. Helens. Gardner et al (1994) recorded this and other east coast findings, while juveniles from Binalong Bay, eastern Tasmania were reported in 1995 (*Invertebrata* 4:6). There have been unpublished sightings of *C.maenas* from the Tamar River and from the North Coast of Tasmania as far west as Smithton (L.McGowan pers.comm., quoting information from CSIRO, Centre for Research on Introduced Marine Pests). Thus the male crab from George Town is not the first of its species found in the Tamar but, with a carapace 72 mm wide, it is a well-grown specimen.

No examples of *C. maenas* had been recognised among the crabs collected during the QVMAG survey of Tamar intertidal invertebrates, 1993-1995 (Smith,1995). However, in 1996 some samples still waited to be examined. The discovery at George Town in February stirred me to make time to finish identifying the survey crabs. This work confirmed that *C.maenas* was not collected during the 1993-1995 Tamar River survey. However, an Australian species which I examined in April and May, 1996, was not recognised in time to be listed by Smith (1995:86).

Five samples of a species of Pilumnidae were collected among rocks on mud:- One male from Bell Bay, East Tamar, 16 January 1993; one male, one female from Middle Arm and one male from Richmond Hill, both West Tamar, 20 March 1993; one male from Donovans Bay, East Tamar, 23 October 1993; 6 males, 5 females from West Bay, Rowella, West Tamar, 16 July 1994. All five localities are in the survey's Zone B, between George Town and the Batman Bridge. The specimens from Bell Bay, Middle Arm and Richmond Hill were checked in April. In these four crabs the apparent distribution of hairs on the carapace is sparse. Because of this I thought that they might belong to *Pilumnopeus serratifrons* (Kinahan, 1856), the smooth-handed crab, a species for which I found no published record from Tasmania. However, among the samples checked in May were the Pilumnidae from Donovans Bay and West Bay. In these twelve crabs the carapace does bear conspicuous groups of long hairs, yet otherwise they agree with the earlier specimens. At this stage I abandoned thoughts of a new record for Tasmania and placed all of the Tamar survey's Pilumnidae, tentatively, in genus *Pilumnus*. Their specific identification now requires the attention of a specialist in Brachyura. The QVMAG has one pre-survey specimen which has been registered as *Pilumnopeus serratifrons*. It was collected at Wilmores Bluff, West Tamar, on

28 September 1992, by M. Grubert (also in the Tamar survey's Zone B). I shall leave it to a specialist to assess this crab as well.

Thank you to Louise McGowan and Dr. Brian Smith, QVMAG, and Roger Buttermore, TMAG, for their help with information for this report.

Alison Green.

Former Curator of Zoology
TMAG

References

- Gardner, N.C., Kwa, S. and Paturusi, A. (1994) *The Tasmanian Naturalist* 116:26-28.
- Green, A. (1996) *The Launceston Naturalist* 29 (5 & 6): 6-7.
- Smith, B.J. (1995). *Tamar Intertidal Invertebrates: An Atlas of the Common Species*.
Queen Victoria Museum and Art Gallery



Cartoon by Bob Mesibov

Observations of a Breeding Cockroach

Since October 1995 we have been observing a cockroach which was found on the floor of our home in South Launceston. We suspect it came in with the firewood. It aroused our curiosity because it was in the process of laying an eggcase. It has been kept in a perspex tank (34cm x 26cm x 12cm) with leaf litter, bark and dry wood, as well as some damp paper for moisture, and checked daily. While the cockroach has not yet been identified by an expert, it resembles specimens of *Platyzygia melanaria* in the QVMAG collection.

The cockroach is approximately 35 mm long and 12 mm wide. It is shiny black and wingless. It has appeared to show little interest in various things we put in as food, with the exception of dog biscuits and a sultana.

The following table represents the times taken to lay the eggcases and the time between each laying:

| Egg Laying Period (days) | Interval Between Eggcases (days) | |
|-----------------------------|-------------------------------------|-----------|
| >6 | | Eggcase 1 |
| | 11 | |
| 2 | | Eggcase 2 |
| | 20 | |
| 5 | | Eggcase 3 |
| | 21 | |
| 10 | | Eggcase 4 |

“Egg Laying Period” is the number of days between when the cockroach was first seen to be laying until laying was completed. “Interval Between Eggcases” is the number of days between the completion of the laying of one eggcase and the first signs of the next.

The first eggcase to hatch was Eggcase 3. It hatched in February, 77 days after it was laid. Eggcase 4 hatched in March, after 68 days. Eggcase 1 was dissected after 180 days, and did not appear to have young in it. Eggcase 2 has not yet hatched after 145 days.

The first hatchlings were approximately 5 mm long by 3 mm wide and resembled the mother, though slightly pear-shaped. The empty eggcase was examined under a ‘Maggy lamp’ and the number of egg cells was found to be 24. From the 17 initial survivors from Eggcase 3, the numbers decreased over 28 days to 6. The 14 survivors from Eggcase 4 were initially kept in a separate container with food and water. When, after 11 days, only 3 survived, these were put into the main tank. After 34 days, only 3 young from both eggcases survive. It is not clear as to why the survival rate has been so low. Those surviving are frequently seen on the sugar cube more recently placed in the tank.

As the tank is on the desk in my room, I have noticed that the cockroaches are most active at night. During the day the mother hides under the water container and the young under the bark and leaf litter, or under the sugar cube.

The cockroach surveillance continues.....

Sophie Reid
Year 8 Student
South Launceston Tasmania 7250
Australia

An Atlas and Guide to the Earthworms of Tasmania

Since the last edition of *Invertebrata* Rob Blakemore has completed his first stint of taxonomic studies of Tasmanian earthworms funded by the Plomley Foundation. Significant progress has been made on the most immediate task facing Rob, making sense of about 250 different kinds of earthworms collected by QVMAG staff, notably Rob D'Orazio and Daniel Soccol, over the past 5 years. Some of the morphospecies recognised in the collection do, as one would expect, fall into the 46 or so previously recognised species' categories, but many more are clearly undescribed. Progress has been slower than anticipated because Rob has had to unravel an exceedingly complex trail left behind in the literature by previous Australian earthworm specialists. In the process he has revealed several taxonomic anomalies but has now reached some tentative conclusions about how previously described as well as the first of our own newly described species should be allocated to genera, and how the genera themselves should be defined and arranged, both among themselves and in relation to those of the mainland. Many of these conclusions have now been written up, together with descriptions of several new species, in two papers that have been submitted for publication. Although many new species remain to be described, this ground work that has been completed will enable additional new species descriptions to flow more rapidly.

This was the state of play at the end of Rob's first Plomley Foundation grant. Although Rob is, at the time of writing, once again back on the taxonomic trail, there was a most pleasant diversion during April. Following negotiations with Mike Driessen, World Heritage Area Zoologist with the Tasmanian Parks and

Wildlife Service, Mike's organisation provided a grant for Rob to study the earthworms of the Lake Pedder area. The brief was to search for the believed-to-be-extinct Lake Pedder Earthworm, to survey earthworms more generally in the Lake Pedder area and to carry out the taxonomy of any new species discovered for the area. Rob and I spent the week of Easter based at Strathgordon and, using a boat belonging to the University's School of Aquaculture (with thanks to Professor Nigel Forteach), were able to land at a variety of points on the lake's shoreline in order to wade ashore and dig for earthworms. At the time of writing, the material collected at 25 sites around the lake has been sorted to 20 taxa including five exotics (mostly from Strathgordon itself), one haplotaxid, one tubificid and 13 undescribed megascolecids. Although some specimens were quite similar to the missing 'Lake Pedder Earthworm' none was similar enough to elicit the cry of "Eureka!". The result provide further evidence of the stunning diversity and speciation that has occurred among Tasmanian earthworms. They also indicate that there is undoubtedly more collecting to be done in remote areas before we will have come close to having all existing species 'in captivity'.

With the completion of the Pedder contract, Rob has recently returned to work on the main collection again, this time funded under the Comprehensive Regional Assessment (CRA) process. Now that earthworms have become one of the most extensively collected and documented invertebrate groups in Tasmania they have the potential to be used in statewide analyses both of their own distributions and also in the more generalised 'bioregionalisation' studies. The value of the earthworm data in this context is increasing daily as Rob confirms and adjusts the morphospecies categories established by Rob D'Orazio during the National Estate Project. Fortunately, in order for the data to be employed within the CRA process it is not necessary to have formal descriptions of new species completed (let alone published). The CRA process has been prepared to support the taxonomic work only because of the comprehensiveness of the collecting (funded by the Heritage Commission) and the fact that Rob was already in full flight (funded by the Plomley Foundation). This is becoming a classic example of how funds from a number of agencies have been incorporated to achieve a result concomitant with the objectives of all of them. Eventually all will also have contributed significantly to the planned final outcome; An Atlas and Guide to the Earthworms of Tasmania.

Tim Kingston
Curator of Zoology
QVMAG

Articles

‘SPIDERS ALIVE’ at the Queen Victoria Museum and Art Gallery

Counting milestones all the way to Launceston and doing continuous mental calculations on the way - all of which kept giving the depressing news that I was barely going to get to the QVMAG as its doors opened to the public - the question of why I had put aside the million and one other things I should have been doing and said yes to attending the Spiders Alive exhibition may have entered my head. And coming all the way back, lacking a voice and absolutely knackered, it's a question I could still have been asking.

But I wasn't.

The ‘Spiders Alive’ day at the QVMAG was simply superb, and full marks must go to those who conceived the idea and brought it to fruition. The general public can often seem something of an abstract concept to those stuck away in the corridors of academia - probably just as much as we seem to them. In fact, in most of the departments or organisations where zoologists are likely to work, this would largely be the case; on a daily basis we're more likely to see a broader cross section of the communities of ants, plankton, rodents, or subcutaneous parasites than we are of our own.

And so it was very satisfying spending a day explaining, one on one to the public the sort of things we do and why. Even in museums and zoos, where the public would arguably get their greatest exposure to biological science (but for the T.V.), it's rarely as interactive or as interpersonal as this. And while I'm always keen to answer the enquiries on spiders or other arachnids that we receive at the University of Tasmania (Hobart) Zoology Department, these nearly always concern the bites, dangers, and removal of spiders rather than general questions on their life-cycle, habitat, longevity or gracefulness.

It was a great opportunity to pass on my interest in cave spiders to others, and it was great to see people getting equally interested and enthusiastic about these gentle giants. *Hickmania troglodytes* is a species of spider that most of the

museum visitors that day will not have seen before, at least not alive, and even less likely fully grown. The live spiders I had weren't quite as large as they can grow, but they were still impressive enough.

Despite the warmth and light - which I had feared would leave me with two rather limp and flaccid specimens as impressive as mouldy cabbage, they not only lasted the day out, but the male positively loved it. Talk about a show-pony. Against all our previous data indicating that the males are particularly intolerant of higher temperature, he was very active (albeit mixed with regular returns to an iced terrarium), and at one point he even started depositing thicker structural silk - the beginning strands of a web - between my fingers. I'd like to think that it was therefore something of a disappointment to both specimens when they were released, or rather returned home from whatever must be the spider equivalent of an alien abduction.

The inter-organisational side of things was a good approach too, with people from various institutions and background putting on displays. The only real shame about that is that I didn't get any real opportunity to look around the other tables, as from the moment I rushed in (maybe just a second or two late) it was all go. But to show that information flows both ways, I did glean quite a few interesting gems from the people visiting the museum. From talking to a bee keeper about his experiences on the sharp end of biology (sorry about that), to amateur spider collectors from years past, and even a bushwalker who had once unwittingly and fortunately uneventfully, carried a NSW funnelweb - an ominous prospect - caught between his pack strap and armpit! There were kids on their first trip to a museum ever, there were people overcoming their fears and letting the cave spiders - however briefly - traverse their hands. While I did still have to say it wasn't poisonous at least a couple of hundred times, people were asking a range of questions and seemed pleased to have the chance to ask the questions that they wanted answers to.

Between scientists there is no guarantee that communication will always be what it could be, but at least mechanisms exist - whether through conferences, journals, newsletters or simply knowing who is doing what and where, or knowing how to find out. But for the general public the opportunity to see behind the scenes, ask questions, and even relate their own experiences usually isn't there. Days like 'Spiders Alive' offer that opportunity, and also serve to

remind us that we should not only share our information and discoveries amongst ourselves, but that we also have a duty to do so with the public that by and large supplies our money. And at a time when the university is fighting funding cuts and trying to justify the research that it does, raising our profile in this way is even more invaluable.

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Cover illustration by Mike Tobias
Undescribed Lissodesmus
confined to NE Tasmania